Message (Digitally Signed)

From: Banister, Stephen D CIV NAVFAC SW [stephen.banister@navy.mil]
Sent: 7/30/2018 2:38:28 PM
To: LEE, LILY [LEE.LILY@EPA.GOV]
CC: Janda, Danielle L CIV [danielle.janda@navy.mil]; Chesnutt, John [Chesnutt.John@epa.gov]; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO [derek.j.robinson1@navy.mil]; Edwards, Zachary L CIV SEA 04 04N [zachary.edwards@navy.mil]; Slack, Matthew L CIV SEA 04 04N [matthew.slack@navy.mil]
Subject: RE: Rad RG's RE: Need for new risk assessment in 5 Year Review + for Parcel G retesting Workplan
Attachments: smime.p7s

Hi Lily,

Yes, I remember discussing the PRG calculator over the phone in March and the protectiveness concerns brought up by the current calculator. We're going to discuss this internally and get back to you later in the week. Thanks for the email, this will help us to understand the concerns.

V/r,
Stephen Banister
619-524-6040

From: LEE, LILY <LEE.LILY@EPA.GOV>
Sent: Sunday, July 29, 2018 9:06 PM
To: Banister, Stephen D CIV NAVFAC SW <stephen.banister@navy.mil>
Cc: Janda, Danielle L CIV <danielle.janda@navy.mil>; Chesnutt, John <Chesnutt.John@epa.gov>; Robinson, Derek J CIV NAVFAC HQ, BRAC PMO <derek.j.robinson1@navy.mil>; Edwards, Zachary L CIV SEA 04 04N <zachary.edwards@navy.mil>; Slack, Matthew L CIV SEA 04 04N <matthew.slack@navy.mil>
Subject: [Non-DoD Source] FW: Rad RG's RE: Need for new risk assessment in 5 Year Review + for Parcel G retesting Workplan

Dear Stephen,

I had talked with you earlier in this process and sent you the email below to explain that EPA's expectation nationwide for many years has been that the Five Year Review process will use the current version of the USEPA PRG Calculator and Building PRG Calculator to evaluate the protectiveness of the current ROD RG's for radionuclides. Before you were assigned to be the RPM leading this process, I had since 2016 discussed this expectation with many of your Navy colleagues. You and they had always verbally agreed that this would occur. In the July 9, 2018, draft Five-Year Review, in Section 6.2.2. Changes in Toxicity and Other Contaminant Characteristics, pp. 6-9, the draft does not address radionuclides at all.

This analysis is especially crucial given that the Navy is about to embark on retesting at Parcel G through a highly scrutinized process with high stakes outcome. This information is crucial for informing the workplan.

Please confirm that the Navy will perform this analysis in a timely manner.

Lily

From: LEE, LILY
Sent: Wednesday, March 14, 2018 9:43 AM
To: Banister, Stephen D CIV NAVFAC SW <stephen.banister@navy.mil>

Cc: John Sourial <john.sourial@errg.com>
Subject: Rad RG's RE: Need for new risk assessment in 5 Year Review

Dear Stephen and John,

I wanted to pass this latest to you re rad RG's from HQ. I had hoped to have more by now, but I didn't want to delay getting it to you in case it helps your process.

I know that you have the official documents. I've just been double checking interpretation w/HQ to make sure that I have the latest versions straight. Judy told me that over her many years of past experience, sometimes interpretations get updated, and she recommended it's better to discover earlier than later in the process before you have gotten too far.

The Parcel F Rad Addendum Jan 2017 had in Appendix 2 the EPA PRG Calculator runs. Those results showed no difference in Navy action required vs. results from RESRAD.

From: Walker, Stuart
Sent: Friday, March 9, 2018 9:53 AM
To: LEE, LILY <LEE.LILY@EPA.GOV>
Cc: Edwards, Jennifer <Edwards.Jennifer@epa.gov>; Sands, Charles <Sands.Charles@epa.gov>; McEaddy, Monica <McEaddy.Monica@epa.gov>
Subject: RE: Any changes since 4/2015? RE: Need for new risk assessment in 5 Year Review

Hi Lily,

Good question. I'm not sure, but Jen is the team lead for 5 year reviews, Chuck works a lot with Jen and does deletions, and Monica is their colleague on 5 year reviews for federal facilities. I think they can better answer your question.

Stuart Walker
Superfund Remedial program National Radiation Expert
Science Policy Branch
Assessment and Remediation Division
Office of Superfund Remediation and Technology Innovation
W (703) 603-8748
C (202) 262-9986

From: LEE, LILY
Sent: Friday, March 09, 2018 12:49 PM
To: Walker, Stuart <Walker.Stuart@epa.gov>
Subject: Any changes since 4/2015? RE: Need for new risk assessment in 5 Year Review

Dear Stuart,

Thank you for sending this several years ago. Hunters Pt is working on its Five Year Review. Has anything changed since you sent this? (Besides the link being out of date now that EPA has been changing its website in lots of places). I want to make sure we are following the latest requirements. Thanks!

- Lily

From: Walker, Stuart
Sent: Monday, April 20, 2015 6:27 PM

Subject: RE: Need for new risk assessment in 5 Year Review

I had a few of you call or email. To clarify, when meant risk assessment, I should have clarified that if you are doing an a modeling run to see if old risk based concentrations are still protective, you should be using EPA's currently recommended model, which are the PRG calculators. I did not mean you had to do a full blown risk assessment document.

The end of my original message referenced Appendix G, in particular the flowchart Exhibit G-4, "Evaluating Changes in Toxicity and Other Contaminant Characteristics," which shows the process you should use to evaluate the significance of changes in toxicity values and other contaminant characteristics when conducting a five-year review. Also that Appendix G, Exhibit G-5, "Hypothetical Scenario for a Change in Toxicity," and Exhibit G-6, "Decision Process for a Hypothetical Change in Toxicity," provide an example of the evaluation process when there are changes in toxicity and other characteristics.

Appendix G can be found at this URL
http://www.epa.gov/superfund/accomp/5year/appendices_f-g.pdf

Below is a copy Exhibit G-4 and G-6 with some language yellow highlighted.

Exhibit G-4: Evaluating Changes in Toxicity and Other Contaminant Characteristics

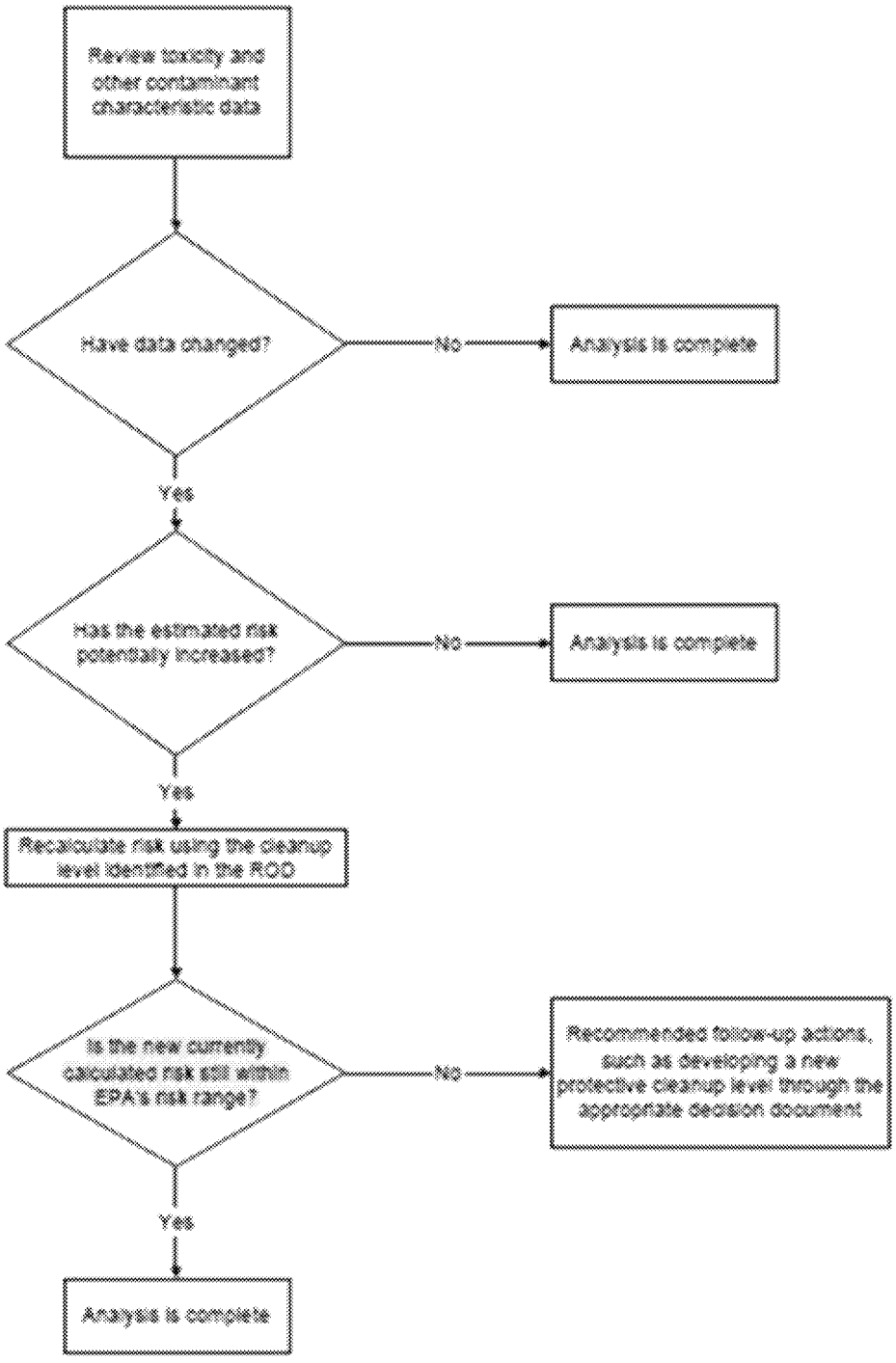
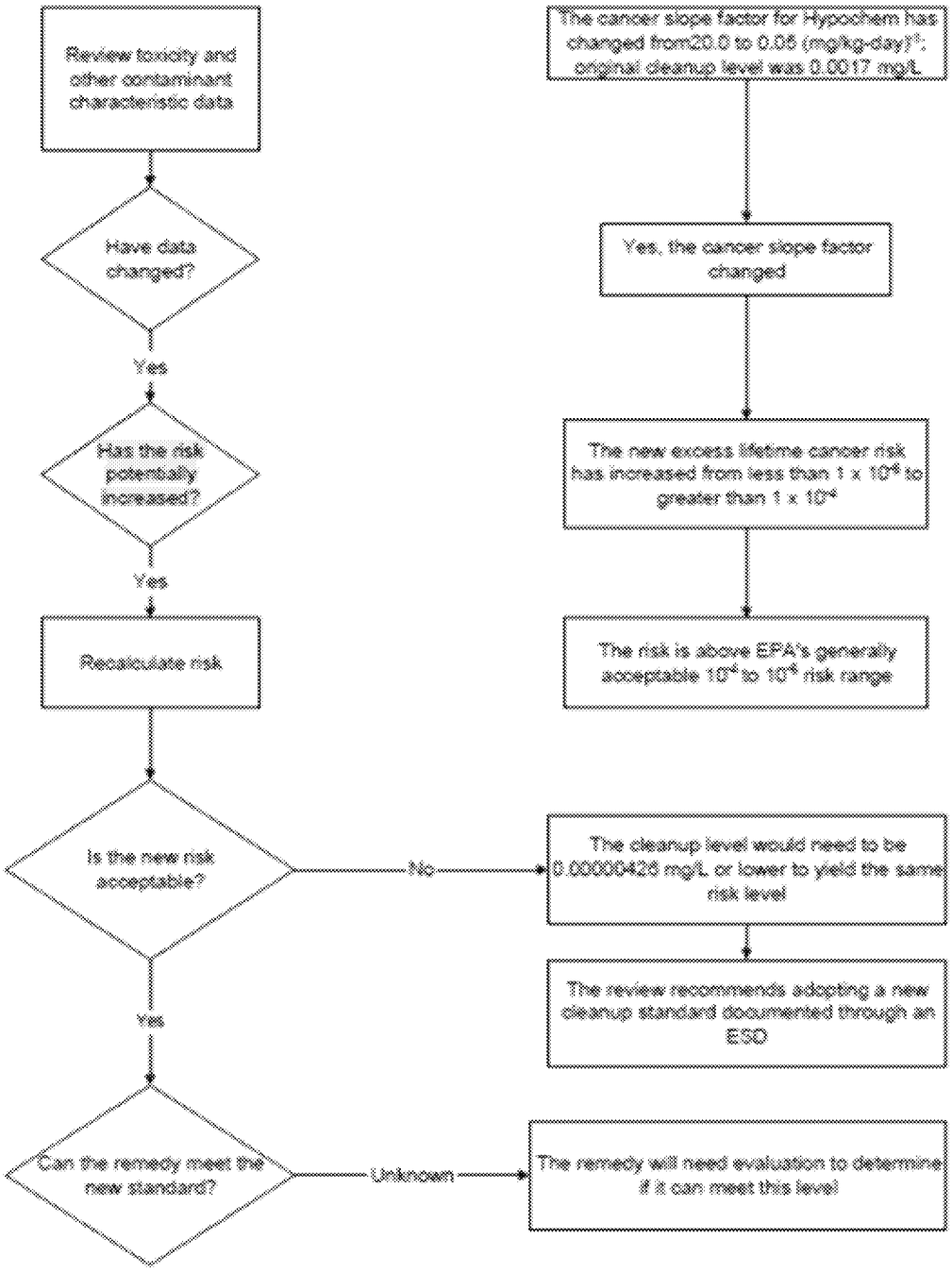


Exhibit G-6: Decision Process for a Hypothetical Change in Toxicity



G-10

From: Walker, Stuart
Sent: Monday, April 20, 2015 4:32 PM
To: OSWER OSRTI Radiation Site Decision-Makers; OSWER OSRTI Regional Radiation Contacts; Brown, Ernie; Garvey, Melanie; Fitz-James, Schatzi; Schumann, Jean; Schlieger, Brian; McEaddy, Monica; Cheatham, Reggie; Bertrand, Charlotte; Indermark, Michele; Simes, Benjamin
Cc: Scozzafava, MichaelE; Anderson, RobinM
Subject: Need for new risk assessment in 5 Year Review

I have received some questions about whether an updated risk assessment should be developed for a 5 year review, since the PRG calculator has been updated. With the updates in 2014 to the PRG calculator, yes, following our guidance you should do a new risk assessment for a CERCLA Five Year Review.

See Section 4, Question B, pages 4-1 to 4.9 of the 5 Year Review guidance.
http://www.epa.gov/superfund/accomp/5year/guidance.pdf

Below are some excerpted language from those pages of the 5 Year Review guidance.

4.0 ASSESSING THE PROTECTIVENESS OF THE REMEDY

A five-year review should determine whether the remedy at a site is or upon completion will be protective of human health and the environment. The level of effort necessary to conduct a five-year review is site-specific and should be tailored appropriately for the remedial action and its stage of implementation. In general, five-year reviews of remedial actions under construction are narrower in scope than five-year reviews of remedies that have been constructed.

Your technical assessment of a remedy should examine the following three questions, which provide a framework for organizing and evaluating data and information and ensure that all relevant issues are considered when determining the protectiveness of the remedy:

- *Question A* – Is the remedy functioning as intended by the decision documents?
- *Question B* – Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?
- *Question C* – Has any other information come to light that could call into question the protectiveness of the remedy?

Exhibit 4-1: Three Questions Used to Determine Whether a Remedy is Protective

When you ask...	you should consider whether...
Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?	• there are changes in standards identified as Applicable or Relevant and Appropriate Requirements (ARARs) in the ROD, newly promulgated standards, and/or changes in TBCs identified in the ROD, that could call into question the protectiveness of the remedy; • there are changes in land use or the anticipated land use on or near the site; • new human health or ecological exposure pathways or receptors have been identified; • new contaminants or contaminant sources have been identified; • there are unanticipated toxic byproducts of the remedy not previously addressed by the decision documents; • there are changes in the physical site conditions; and • there are changes in the toxicity factors for contaminants of concern.

4.2 Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?

In conducting your five-year review, you should evaluate the effects of significant changes in standards and assumptions that were used at the time of remedy selection. Changes in the promulgated standards or "to be considereds" (TBCs) may impact the protectiveness of the remedy. Similarly, you should investigate the effect of significant changes in the risk parameters that were used to support the remedy selection, such as reference doses, cancer potency factors[12], and exposure pathways of concern. Finally, you should evaluate whether the original

Exhibit 4-2: Example Questions to Determine if Assumptions Upon Which the Remedy was Based Have Changed

For an assumption based on ...	an example question may be...
standards and TBCs	Are there changes in the standards identified as ARARs in the ROD that bear on the protectiveness of the remedy? Are there newly promulgated standards that might apply or be relevant and appropriate to the site and that bear on the protectiveness of the remedy? Are there changes in TBCs identified in the ROD that bear on the protectiveness of the remedy?
cleanup levels	What is the basis for each cleanup level identified in the ROD (e.g., risk-based or promulgated standards as ARARs)? Have there been changes to the basis of the cleanup levels? (See sample questions for "standards or TBCs" above, and for "toxicity and other contaminants characteristics" below.)
exposure pathways	Has land use or expected land use on or near the site changed (e.g., industrial to residential, commercial to residential)?
exposure pathways	Have any human health or ecological routes of exposure or receptors changed or been newly identified (e.g., dermal contact where none previously existed, new populations or species identified on site or near the site)?
exposure pathways	Are there newly identified contaminants or contaminant sources?
exposure pathways	Are there unanticipated toxic byproducts of the remedy not previously addressed by the decision documents (e.g., byproducts not evaluated at the time of remedy selection)?
exposure pathways	Have physical site conditions changed such that protectiveness may be affected (e.g., changes in anticipated direction or rate of groundwater flow)? Has understanding of physical site conditions changed (e.g., identification of a new groundwater divide)?
toxicity and other contaminant characteristics	Have toxicity factors for contaminants of concern at the site changed (e.g., Integrated Risk Information System (IRIS) evaluations? (See http://www.epa.gov/IRIS). Have other contaminant characteristics changed? Have ecological toxicity reference values and/or ecological "no observed adverse effect levels/lowest observed adverse effect" (NOAELs/LOAELs) levels changed.

4.2.3 How should I check the impact of changes in toxicity and other contaminant characteristics?

Cleanup levels at a site may be based on the calculated risk for chemicals and/or media where there are no promulgated standards (e.g., site-specific soil and sediment action levels) or existing standards are not sufficiently protective for site-specific conditions. If the remedy is intended to meet a site-specific, risk-based cleanup level, you should check to see whether toxicity or other contaminant characteristics used to determine the original cleanup level have changed. In addition to toxicity, you should examine other contaminant characteristics that determine the nature and extent of contaminant migration and effects on receptors (e.g. sorption characteristics, ability to bioaccumulate, bioavailability). If there have been changes in the understanding or in our knowledge of these physical/chemical characteristics, you may need to recalculate risk using the original cleanup level or using the current concentration if it has not been identified as a contaminant of concern. An increase in the cancer slope factor, for example,

may suggest that the risk from a chemical concentration is above the generally acceptable cancer risk range (10^{-4} to 10^{-6}). You should also consider changes in toxicity and other contaminant characteristics relating to ecological receptors.

If the estimated risk has increased, then you should determine whether the new estimated risk is acceptable. In most cases, you should base this determination on whether the risk is within or below the generally acceptable risk range of 10^{-4} to 10^{-6} for carcinogenic risk and the hazard index is below 1 for non-carcinogenic effects. If the estimated risk is not protective, you should determine what actions need to be taken to achieve an acceptable level of risk. Appendix G, Exhibit G-5, "Hypothetical Scenario for a Change in Toxicity," and Exhibit G-6, "Decision Process for a Hypothetical Change in Toxicity," provide an example of the evaluation process when there are changes in toxicity and other characteristics. Note: Future guidance will address the appropriateness of using various statistical methods in making the determination about when remedial action objectives (RAOs) have been attained.